

10/510343

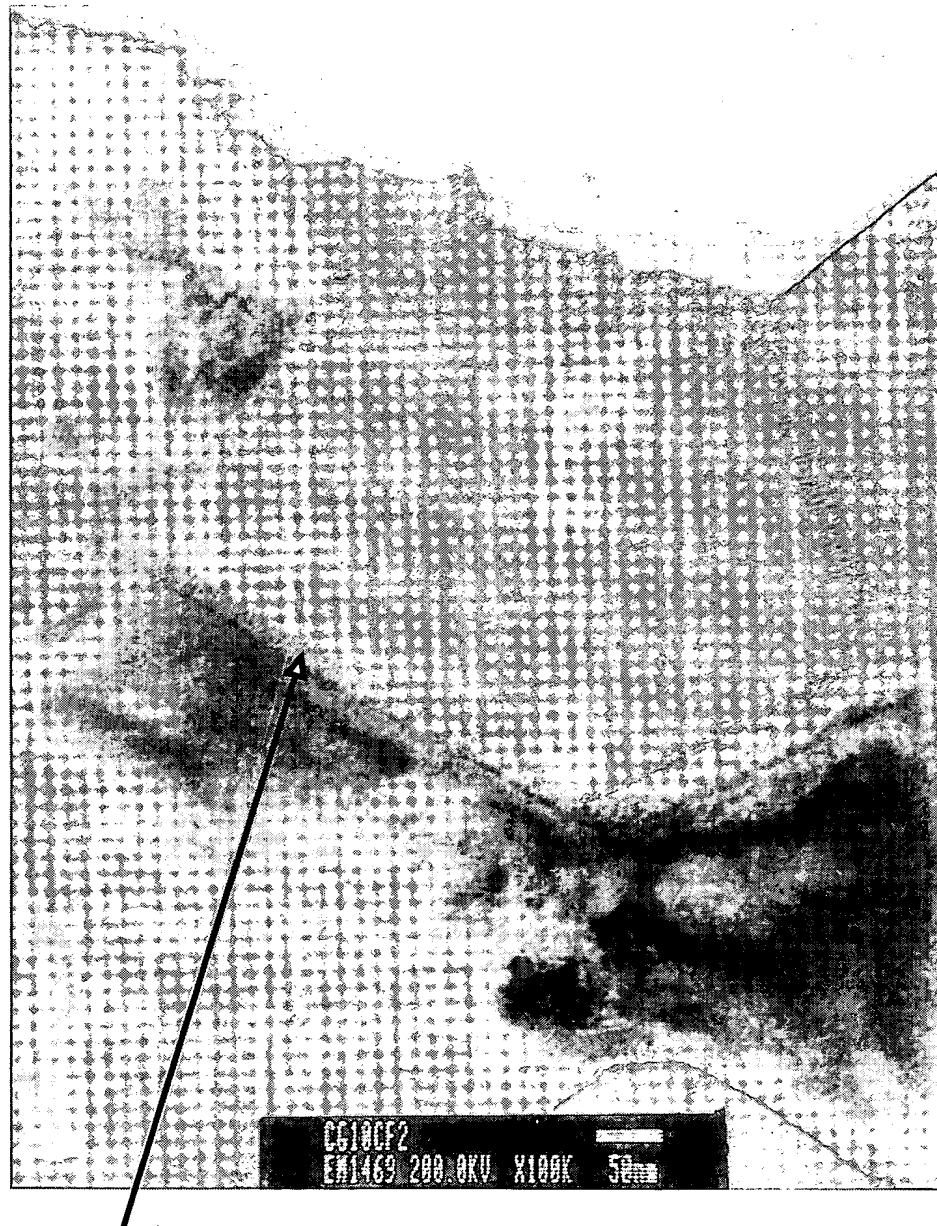
FIG. 1

CFO
(Electronic Conductive Phase)



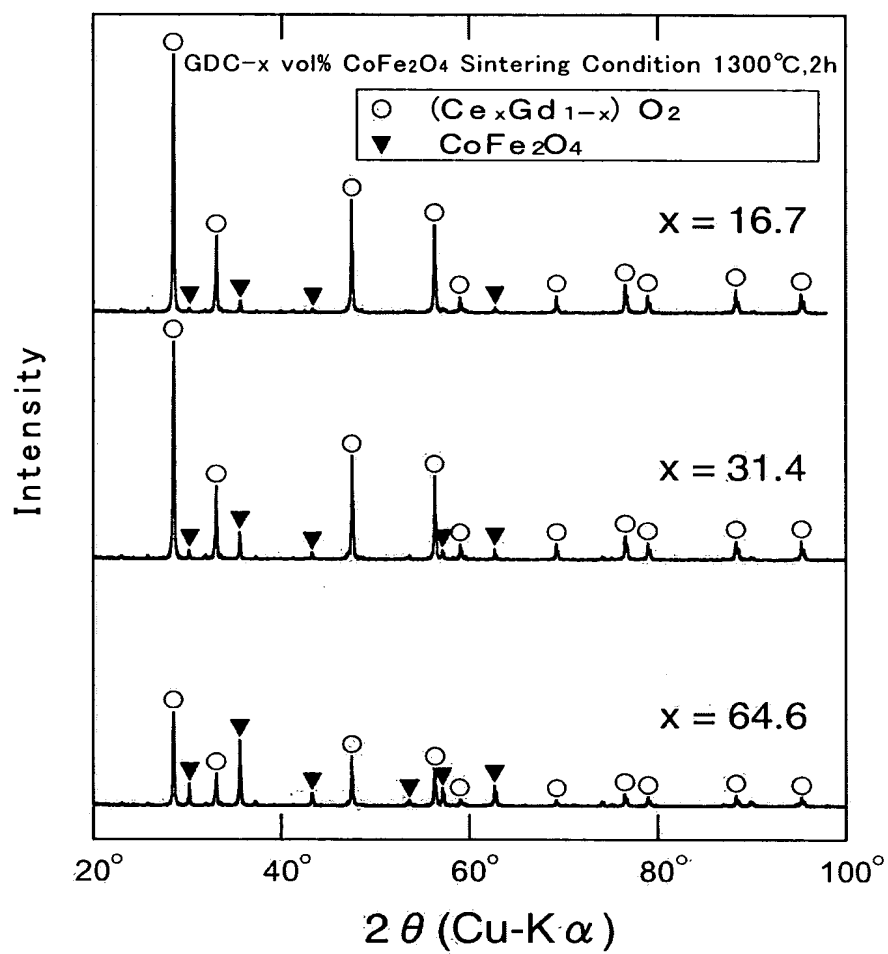
GDC
(Electronic Conductive Phase)

FIG. 2



Grain Boundavy Phase

FIG. 3



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FIG. 4

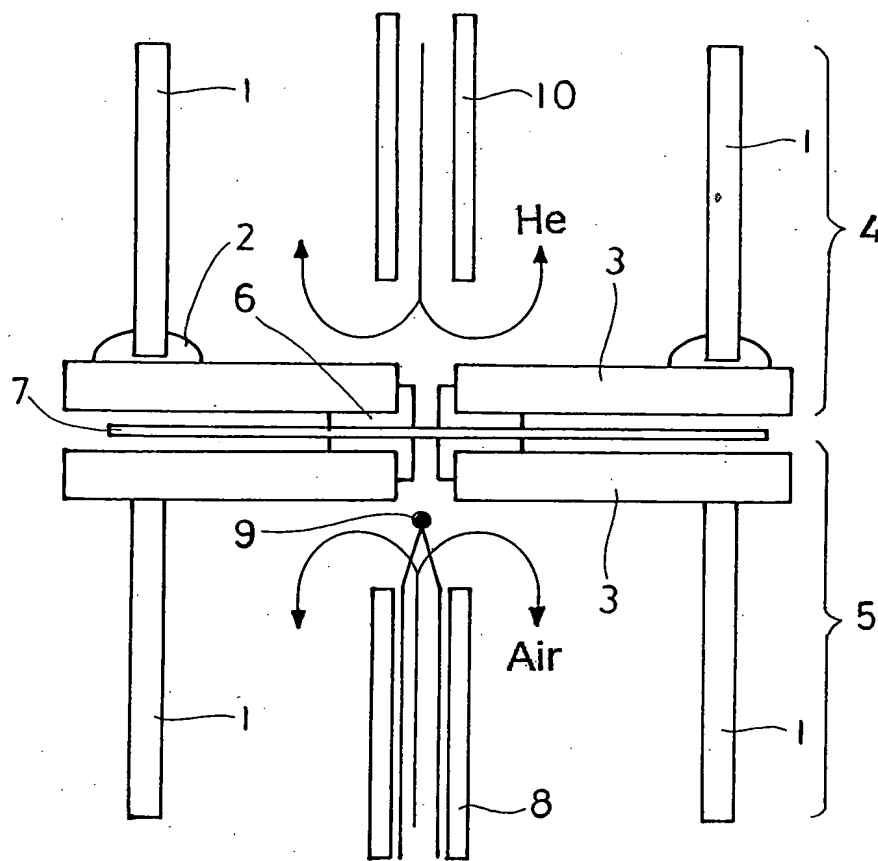


FIG. 5

GDC-x vol% Oxygen Permeability of CFO Composite

| Composition | Temperature (°C) | Thickness (mm) | Gas | j_{O_2} ($\mu\text{mol}\cdot\text{cm}^{-2}\cdot\text{s}^{-1}$) | Ref |
|-------------|---------------------|-------------------|-------------------|---|-----------|
| 31CFO | 1000 | 1.38 | He | 0.107 | This work |
| 24CFO-Ni | 1000 | 1.05 | He | 0.204 | This work |
| 24CFO-Ru | 1000 | 1.04 | He | 0.208 | This work |
| 24CFO-Ru | 1000 | 0.86 | Ar-H ₂ | 1.260 | This work |
| 25GCC | 1000 | 1.50 | He | 0.083 | (1) |
| 25LSM | 950 | 1.00 | He | 0.067 | (2) |

(1) U. Niggeet *et. al.* Solid State Ionics **146** (2002) 163.

(2) V.V. Kharton *et. al.* J. Eur. Ceram. Soc. **21** (2001) 1763.

FIG. 6

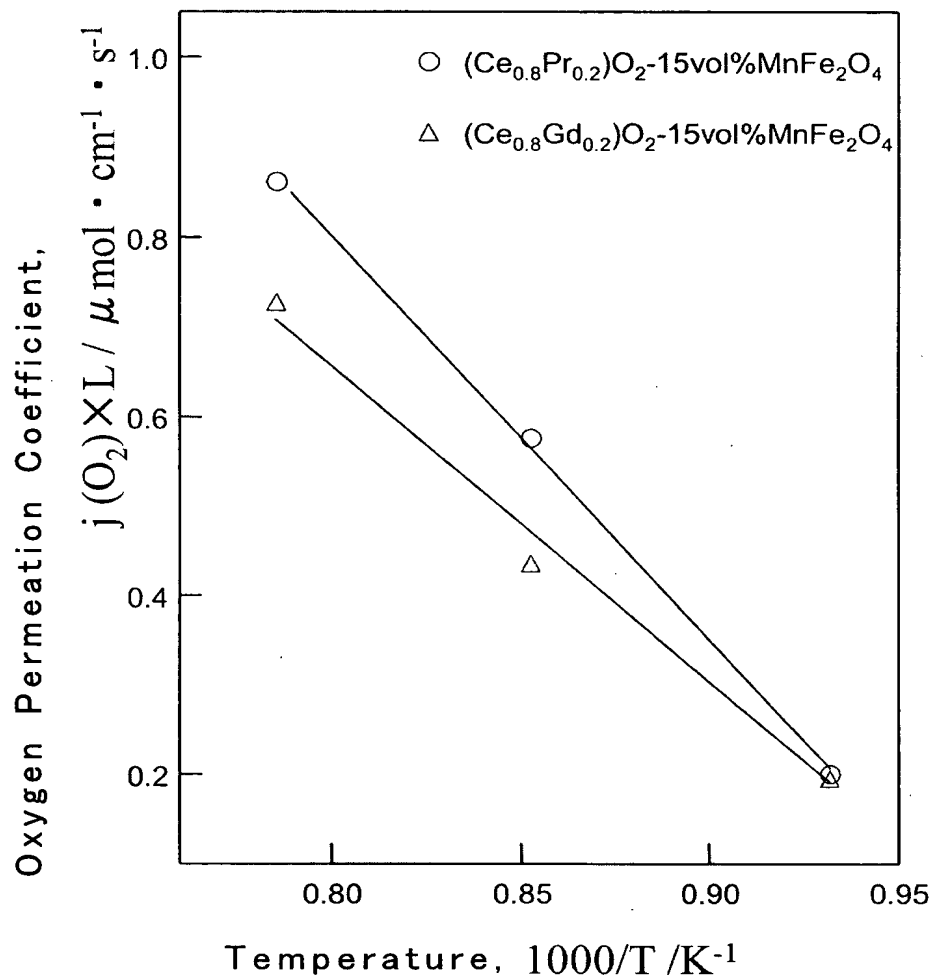


FIG. 7

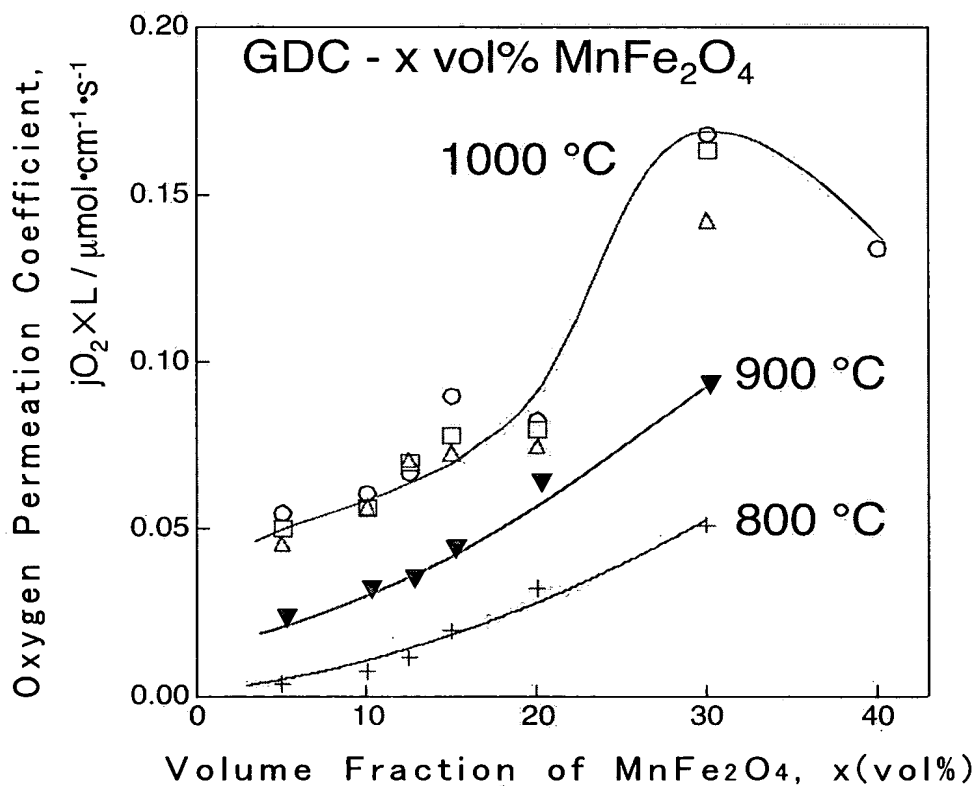


FIG. 8

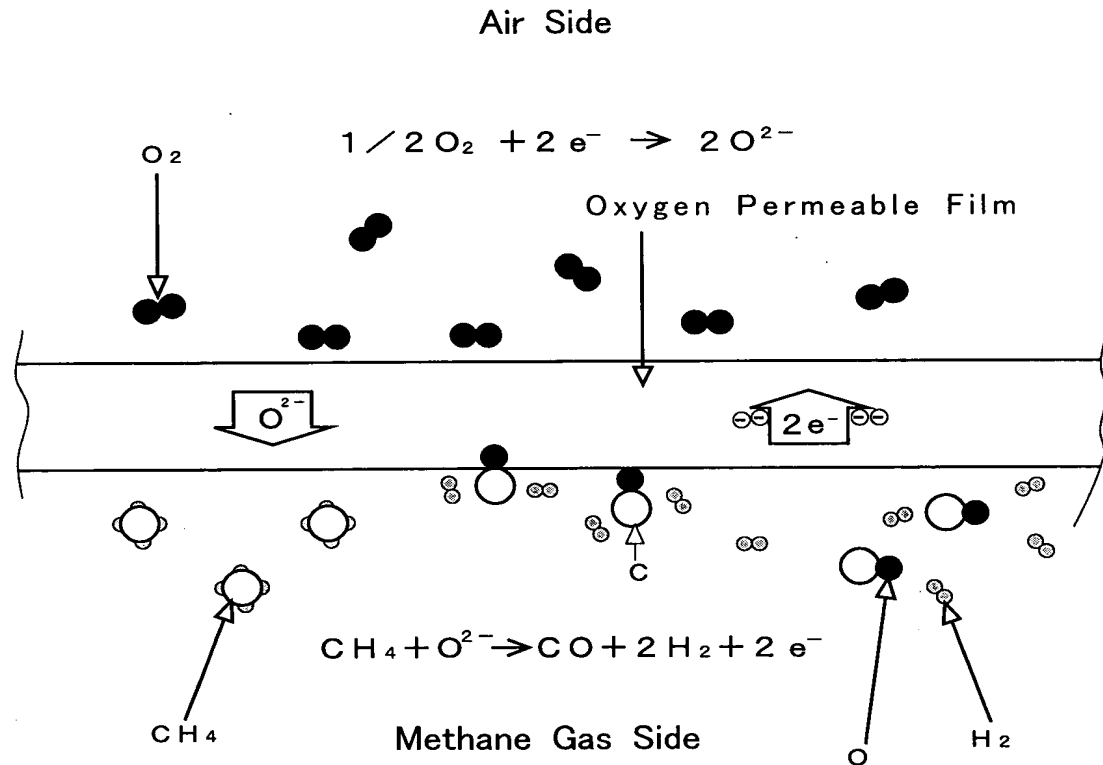


FIG. 9

